Project Name	InfotAiMOS
Online team meeting	https://fau.zoom.us/j/67792730528
Demo Day Room	https://fau.zoom.us/j/69904910563
Production system (if any)	tba
Test system (if any)	tba
GitHub repository	https://github.com/amosproj/amos2022ws02-automotive-test-app/
GitHub feature board	https://github.com/orgs/amosproj/projects/5
GitHub impediments backlog	https://github.com/orgs/amosproj/projects/6
Team T-shirt (black, male)	https://www.shirtinator.de/t-shirts/gestalten/t-shirt-bedrucken#/load/share/eca1c484-76e3-403a-8df9-b080a79b659f
Team T-shirt (black, female)	https://www.shirtinator.de/t-shirts/gestalten/t-shirt-bedrucken#/load/share/fb698f2d-07cd-4e63-9301-62e7e0d35a1b
Additional materials	

Last Name	First Name	GitHub User Name	Email Address
Rehm	Ronja	ronjarehm	ronja.rehm@fau.de
Schreiner	Stefanie	stefanieschreiner	stefanie.schreiner@fau.de
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Tuncay	Berkan Ender	BETuncay	berkan.tuncay@fau.de

#	Meeting Day	Product Owner	Software Developer	Release Manager	Scrum Master	Comment
1	2022-10-19	Corinna Wüllner, Stefanie	Everyone else	N/A	Ronja Rehm	
2	2022-10-26	Corinna Wüllner, Stefanie	Everyone else	Anders	Ronja Rehm	
3	2022-11-02	Corinna Wüllner, Stefanie	Everyone else	Berkan	Ronja Rehm	
4	2022-11-09	Corinna Wüllner, Stefanie	Everyone else	Daniel	Ronja Rehm	
5	2022-11-16	Corinna Wüllner, Stefanie	Everyone else	Emre	Ronja Rehm	
6	2022-11-23	Corinna Wüllner, Stefanie	Everyone else	Hanna	Ronja Rehm	
7	2022-11-30	Corinna Wüllner, Stefanie	Everyone else	Lara	Ronja Rehm	Mid-term due
8	2022-12-07	Corinna Wüllner, Stefanie	Everyone else	Tobias	Ronja Rehm	
9	2022-12-14	Corinna Wüllner, Stefanie	Everyone else	Anders	Ronja Rehm	
10	2023-01-11	Corinna Wüllner, Stefanie	Everyone else	Berkan	Ronja Rehm	
11	2023-01-18	Corinna Wüllner, Stefanie	Everyone else	Daniel	Ronja Rehm	
12	2023-01-25	Corinna Wüllner, Stefanie	Everyone else	Emre	Ronja Rehm	
13	2023-02-01	Corinna Wüllner, Stefanie	Everyone else	Hanna	Ronja Rehm	
14	2023-02-08	Corinna Wüllner, Stefanie	Everyone else	Lara	Ronja Rehm	Demo day!
15	2023-02-15	Corinna Wüllner, Stefanie	Everyone else	Tobias	Ronja Rehm	Retrospective

Goals	Have a working and visually pleasing app; good team work; good grades; continuous work throughout the semester
Meeting norms	Be punctual; active contribution; respectful environment
Working norms	Do the work you're assigned to do, in the agreed time frame; in case of questions/struggles ask for help; set realistic goals; work
Coordination norms	If you cannot attend a meeting, please inform the team asap and give information on work in text-form
Communication norms	Open/honest/constructive communication; decisions should be made in consensus; if questions arise, take time to answer themm
Consideration norms	In case of issues: have open communication about it, resolve issues in a respectful way; for assistance contact Scrum Master
Cont. improvement norms	Learn from mistakes; give positive/negative feedback to team mates; exchange knowledge
Rewards	Give compliments for a job well done; have a virtual beer together
Sanctions	If at least 5mins too late to a meeting: sing a christmas carol

Product Vision	Project Mission
The importance of infotainment systems in cars is increasing and users expect more and more connectivity in the car (Handelsblatt, 2005). At the same time, different car manufacturers use different infotainment systems, each customized to the specific needs of the respective manufacturers. With InfotAiMOS, our goal is to create an OpenSource Android Automotive test app, which can be used by various software developers of infotainment systems to help them with the development of other apps and thus, make their work easier.	The mission of this project is to develop a functioning Android Automotive test app, that can help to test and simulate different use cases of infotainment systems immediately or with a time delay. It particularly focuses on the simulation of these use cases in the context of navigation, steering wheel knobs, media play, power management and vehicle properties. This app should therefore, provide the developers with a test system in which apps can be tested in a safe environment.

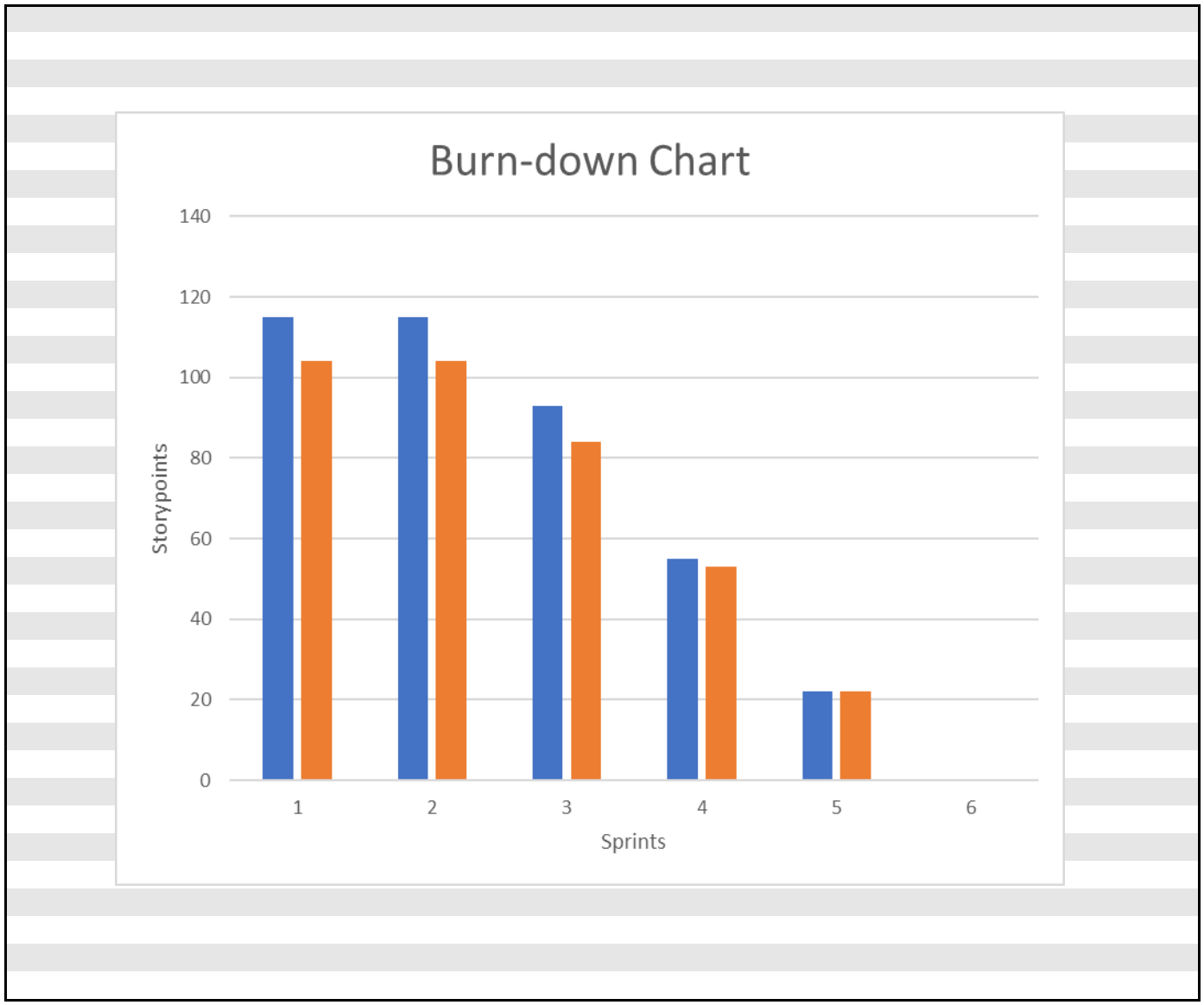
Term	Definition

Sprint	Theme Goal / Feature Name	Est. Size	Est.	Real Size	Real Remaining
Release					
	Total	115	0	104	0
Sprints					
			Estimated burn-down		Real burn-down
1	Initial organizational tasks	0	115	0	104
2	Familarization with project	0	115	0	104
3	Implementation of Navigation Context Area	22	93	20	84
4	Development of Navigation & Steering Wheel	38	55	31	53
5	Development of additional Areas	33	22	31	22
6	Implementation of Vehicle Properties Use Cases	22	0	22	0
Features					
1	**Initial organizational tasks**				
	Set up development environment and team structures				
	#30 Set up development				
	#31 Set up SD kickoff-meeting				
2	**Familarization with project**				
	Familiarize with programming environmer				
	#9 Familiarize with Android Automotive				
	#10 Familiarize with test driven development				
	#11 Familiarize with Android development				
	#12 Familiarize with Kotlin				
	#27 Fill Bill of Materials				
	#28 Come up with Software Architecture				
	#29 Create an App				
3	**Implementation of Navigation Context Area**				

	Create area for navigation use cases		
	#15 Design GUI for starting page	3	3
	#18 Implement GUI for use cases in navigation context area	3	3
	#5 Design GUI for use cases in navigation context area	3	3
	#16 Implement functionality to enter navigation use case area	3	2
	#8 Simulate starting a navigation	5	5
	#14 Simulate ending a navigation	3	2
	#17 Implement back button to previous page	2	2
4	**Development of Navigation and Steering Wheel Area**		
	Further development of navigation area and implementation of steering wheel area		
	#61 Add an icon for the application	2	2
	#42 Design GUI for media play area	2	3
	#41 Implement functionality of clicking on activeNavigation Button	3	2
	#39 Design GUI for showing name and descriptions of steering wheel buttons	3	2
	#38 Implement click dummy to implement button functionality	2	2
	#37 Design GUI for steering wheel	5	5

	#35 Implement functionality of pressing a steering wheel button: voicecontrol	5	2
	#34 Implement functionality of pressing a steering wheel button: play/pause	5	2
	#33 Implement functionality of pressing a steering wheel button: skipForward	3	2
	#20 Implement functionality to enter steering wheel use case area	2	2
	#19 Design GUI for steering wheel area on starting page	3	2
	#13 Show that navigation is currently active	3	5
5	**Development of additional areas**		
	Further development of steering wheel, vehicle properties and power management area		
	#55 Implement tests for the starting page	3	2
	#57 Implement tests for the navigation area	3	3
	#21 Implement GUI for steering wheel in Android Studio	5	5
	#40 Implement functionality to show name and description when clicking on a button	3	3
	#66 Implement toggle button to switch between functionality and description wheel	3	3
	#25 Design GUI for vehicle properties area on starting page	5	5

	#7 Implement GUI for use cases in the vehicle properties context area	2	2
	#26 Implement functionality to enter vehicle properties use case area	2	2
	#22 Design GUI for power management area on starting page	2	2
	#24 Implement GUI for use cases in the power management context area	3	2
	#23 Implement functionality to enter power management use case area	2	2
6	**Implementation of Vehicle Properties Use Cases & Refactoring**		
	Develop an Area to test Vehicle Properties		
	#58 Create the Build Process Video	5	5
	#72 Implement functionality of pressing a steering wheel button: SeekForward	3	2
	#51 Implement functionality to switch between day and night mode	5	5
	#43 Implement functionality to enter media play use case area	2	2
	#92 Design mute button in power management area	2	1
	#93 Design delay button in power management area	2	2
	#56 Implement tests for the steering wheel knob area	3	5


Burn-down Chart
140
120
100
80
60
40
20
0
Storypoints
1
2
3
4
5
6
Sprints

Sprint	Theme Goal	Feature Name	Est. Size	Est.	Real Size	Real Remaining
Release						
	Total		259	0	217	0
Sprints						
				Estimated burn-down		Real burn-down
1	Initial organizational tasks		0	259	0	217
2	Familarization with project		0	259	0	217
3	Implementation of Navigation Context Area		22	237	20	197
4	Development of Navigation & Steering Wheel Areas		38	199	31	166
5	Development of additional Areas		33	166	31	135
6	Implementation of Vehicle Properties Use Cases		22	144	22	113
7	Implementation of Timer Context Area & Speech Assistant		31	113	31	82
8	Implementation of Speech Assistant and Vehicle Properties Use Cases		19	94	14	68
9	Implementation of TestDrive area and further dev		33	61	33	35
11	Implementation of Use Cases for recording test drives & further dev		17	44	19	16
12	Further implementation of Use Cases for test drives and steering wheel		19	25	16	0
13	Last Implementations and Clean-Up for the Final Project Release		25	0	tbd.	tbd.
14	Creation of Final Project Presentation		tbd.	tbd.	tbd.	tbd.
Features						
1	**Initial organizational tasks**					
		Set up development environment and team structures				
		#30 Set up development branch in Github				
		#31 Set up SD kickoff-meeting				
2	**Familarization with project**					
		Familiarize with programming environment				
		#9 Familiarize with Android Automotive				
		#10 Familiarize with test driven development				
		#11 Familiarize with Android development				
		#12 Familiarize with Kotlin				
		#27 Fill Bill of Materials				
		#28 Come up with Software Architecture				

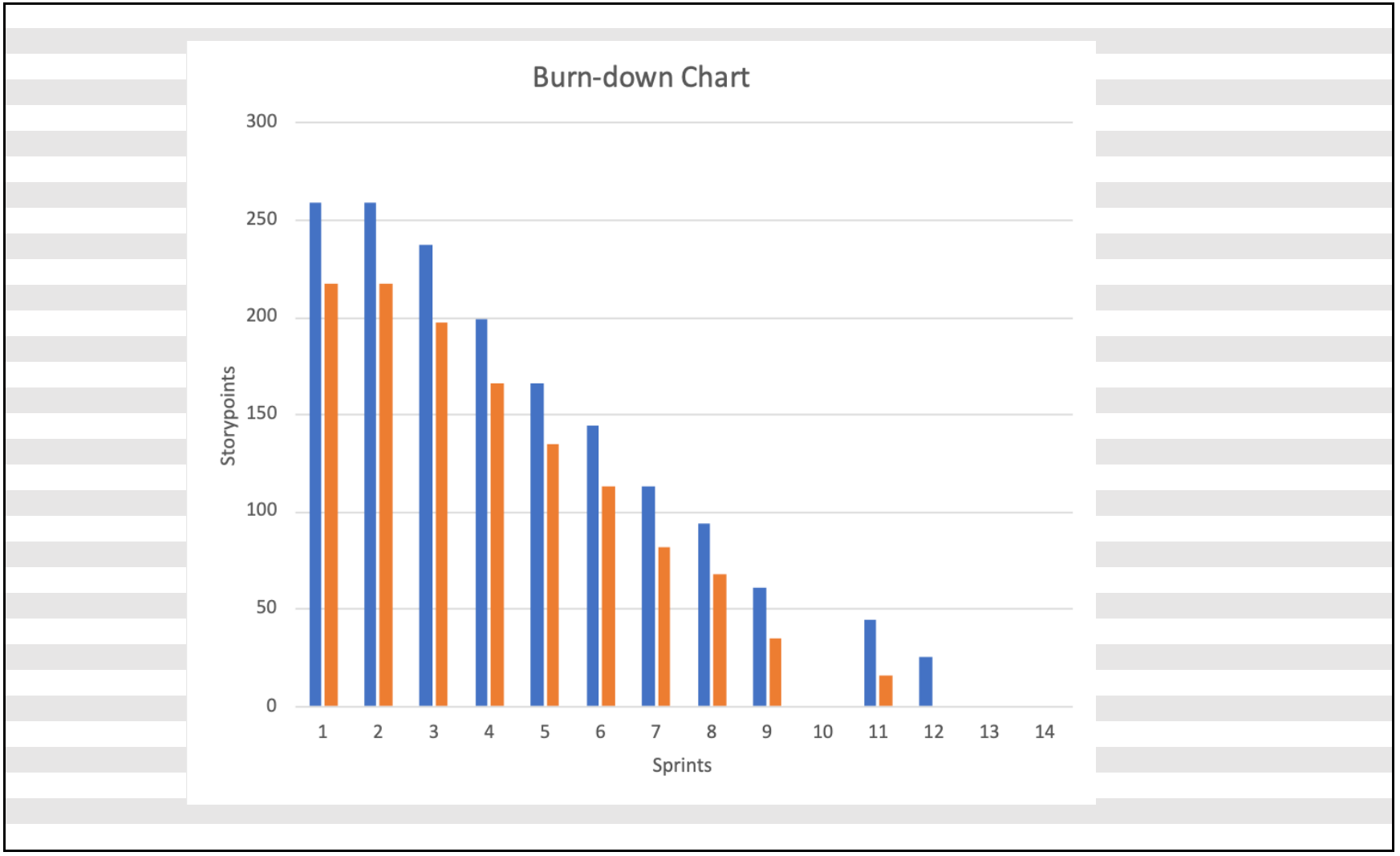
	#29 Create an App		
3	**Implementation of Navigation Context Area**		
	Create area for navigation use cases		
	#15 Design GUI for starting page	3	3
	area	3	3
	#5 Design GUI for use cases in navigation context area	3	3
	area	3	2
	#8 Simulate starting a navigation	5	5
	#14 Simulate ending a navigation	3	2
	#17 Implement back button to previous page	2	2
4	**Development of Navigation and Steering Wheel Area**		
	Further development of navigation area and implementation of steering wheel area		
	#61 Add an icon for the application	2	2
	#42 Design GUI for media play area	2	3
	#41 Implement functionality of clicking on activeNavigation Button	3	2
	#39 Design GUI for showing name and descriptions of steering wheel buttons	3	2
	functionality	2	2
	#37 Design GUI for steering wheel	5	5
	#35 Implement functionality of pressing a steering wheel button: voicecontrol	5	2
	#34 Implement functionality of pressing a steering wheel button: play/pause	5	2
	#33 Implement functionality of pressing a steering wheel button: skipForward	3	2
	#20 Implement functionality to enter steering wheel use case area	2	2
	#19 Design GUI for steering wheel area on starting page	3	2
	#13 Show that navigation is currently active	3	5

5	**Development of additional areas**		
	Further development of steering wheel, vehicle properties and power management area		
	#55 Implement tests for the starting page	3	2
	#57 Implement tests for the navigation area	3	3
	#21 Implement GUI for steering wheel in Android Studio	5	5
	#40 Implement functionality to show name and description when clicking on a button	3	3
	#66 Implement toggle button to switch between functionality and description wheel	3	3
	#25 Design GUI for vehicle properties area on starting page	5	5
	#7 Implement GUI for use cases in the vehicle properties context area	2	2
	#26 Implement functionality to enter vehicle properties use case area	2	2
	#22 Design GUI for power management area on starting page	2	2
	#24 Implement GUI for use cases in the power management context area	3	2
	#23 Implement functionality to enter power management use case area	2	2
6	**Implementation of Vehicle Properties Use Cases & Refactoring**		
	Develop an Area to test Vehicle Properties		
	#58 Create the Build Process Video	5	5
	#72 Implement functionality of pressing a steering wheel button: SeekForward	3	2
	#51 Implement functionality to switch between day and night mode	5	5
	#43 Implement functionality to enter media play use case area	2	2
	#92 Design mute button in power management area	2	1
	#93 Design delay button in power management area	2	2
	#56 Implement tests for the steering wheel knob area	3	5

7	**Implementation of Timer Context & Speech Assistant Area**		
	Develop an Area for the timer context and the Speech Assistant		
	#100 Simulate speech announcement in navigation context area	5	5
	#113 Design GUI for App Settings area on starting page	2	2
	#114 Implement functionality to enter App Settings context are	1	1
	#123 Implement GUI for use cases in App Settings Context area	2	2
	#115 Move functionality for switch between day/night mode to App Settings context	2	2
	#101 Design GUI for timer area on starting page	2	2
	#102 Implement functionality to enter timer use case area	1	1
	#117 Implement GUI for list in timer area	5	5
	#105 Design GUI for speech assistant area on starting page	2	2
	#106 Implement functionality to enter speech assistant use case area	1	1
	#124 Implement GUI for use cases in Speech Assistant context area	1	1
	#104 Implement functionality for timer in timer context area	5	5
	#103 Design Delay button in speech assistant area	2	2
8	**Implementation of Speech Assistant & Vehicle Properties Area**		
	Further development of speech assistant and vehicle properties area		
	#110 Design and implement tile to show vehicle identifier number in vehicle properties area	3	5
	#141 Design GUI for batterie low message in vehicle prop	3	2
	#136 Research if functionality of changing the vehicle identifier number	3	1
	#137 Buttons are displaced from the image of the steerin	5	3

	#139 Get a notification when battery level drops below a self selected level	5	3
9	**Implementation of Test Drive area & further development of Speech Assistant**		
	Design & implementation of test drive area and further use cases in Speech Assistant Area		
	#107 Implement functionality of PTT speech assistant	8	8
	#108 Implement functionality of TTT speech assistant	1	1
	#112 Design and implement tile to show battery level in vehicle properties area	5	5
	#116 Refactor GUI of starting page	5	5
	#147 Design GUI for test drive area on starting page and Implement functionality to enter it	2	2
	#150 Design and Implement a tile for starting/stopping a recording of a test drive in the test drive area	3	3
	#157 Refactor buttons in navigation use case area	3	3
	#161 Design and implement list of test drive recordings in test drive area	3	3
	#166 Design and implement GUI for list in media play area	3	3
10	**Christmas Break**		
11	**Implementation of Use Cases for recording test drives & further development of the Media Browser Service & Steering wheel**		
	Implementation of functionality to record/view test drives & activating MediaBrowserS.		
	#151 Implement functionality of starting/stopping a recording of a test drive	5	5
	#163 Implement functionality of viewing log of recorded test drive	3	5
	#165 Design and implement toggle button for MediaBrowserService	2	2
	#176 Implement steering wheel button: SkipBackward / SeekBackward	3	3
	#178 Implement sequence of pressing steering wheel buttons	3	3
	#180 Fix navigation indicator not turning red	1	1

12	**Further implementation of Use Cases for test drives and steering wheel**		
	Implementation of functionality for adding and deleting test drives and steering wheel button sequences		
	#179 Implement functionality of exporting logs from test drive	3	3
	#185 Implement functionality of deleting previously recorded test drives	3	3
	#186 Implement functionality to add new steering wheel button sequences	5	5
	#187 Implement popup receiving specific ADB command	5	3
	#177 Update User Documentation	3	2
13	**Last Implementations and Clean-Up for the Final Project Release**		
	Implementation of remaining functionality and preparation for final project release		
	#167 Implement functionality of activating/deactivating a MediaBrowserService	8	tbd.
	#194 Implement functionality to delay a speech interaction in the speech assistant area	2	tbd.
	#197 Create Demo Day video	8	tbd.
	#175 Update UML in the Documentation	5	tbd.
	#174 Clean up branches in GitHub	2	tbd.
14	**Creation of Final Project Presentation**		
	tbd.	tbd.	tbd.
	tbd.	tbd.	tbd.
	tbd.	tbd.	tbd.


Burn-down Chart
300
250
200
150
100
50
0
Storypoints
1
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14
Sprints

#	Feature Definition of Done	Sprint Release Definition of Done	Project Release Definition of Done
	- Code compiles and builds	- DoD of each feature in the sprint release is met	- Everything from the Sprint release is fullfilled
	- Acceptance criteria are met	- No known severe bugs open	- All implemented features must be fully working
	- Tests have been written and were passed	- All feature tests were passed	- Documentation is available
	- Code is peer-reviewed	- Feature is merged into the main branch	- APK is available
	- Feature is merged into development branch	- Implemented Issues are closed	
	- Documentation is updated	- Feature board is updated	
	- Bill of Materials is updated	- Sprint Release Candidate is properly tagged	

Type	Link / reference
user documentation	https://github.com/amosproj/amos2022ws02-automotive-test-app/wiki/User-documentation
build documentation	https://github.com/amosproj/amos2022ws02-automotive-test-app/wiki/Build-Documentation
design documentation	https://github.com/amosproj/amos2022ws02-automotive-test-app/wiki/Design-Documentation

#	Context	Name	Version	License	Comment
1	junit	junit	4.13.2	Eclipse Public	https://github.com/junit-team/junit4
2	androidx.core	core-ktx	1.9.0	Apache 2.0	https://github.com/androidx/androidx
3	androidx.appcompat	appcompat	1.5.1	Apache 2.0	
4	androidx.test.ext	junit	1.1.3	Apache 2.0	
5	androidx.test.espresso	espresso-core	3.4.0	Apache 2.0	
6	androidx.activity	activity-ktx	1.6.1	Apache 2.0	
7	androidx.constraintlayout	constraintlayout	2.1.4	Apache 2.0	
8	androidx.media	media	1.6.0	Apache 2.0	
9	androidx.fragment	fragment-ktx	1.5.4	Apache 2.0	
10	com.google.android.material	material	1.7.0	Apache 2.0	https://github.com/material-components/material-
11	JLLeitschuh	ktlint-gradle	11.0.0	MIT license	https://github.com/JLLeitschuh/ktlint-gradle
12	androidx.lifecycle	lifecycle-*	2.5.1	Apache 2.0	https://github.com/androidx/androidx
13	androidx.navigation	navigation	2.5.3	Apache 2.0	
14	org.hamcrest.Matchers	hamcrest matcher	1,3	BSD-3-Clause	https://github.com/hamcrest/JavaHamcrest
15	io.mockk	mockk	1.13.2	Apache 2.0	https://github.com/mockk/mockk
16	androidx.car.app	Car App	1.3.0	Apache 2.0	
17	com.squareup.moshi	Moshi	1.14.0	Apache 2.0	https://github.com/square/moshi

Last Name	First Name	Value
Rehm	Ronja	
Schreiner	Stefanie	
Wüllner	Corinna	
Güder	Emre	
Hausding	Anders	
Lang	Daniel	
Müller	Hanna	
Schmid	Tobias	
Sulzbach	Lara	
Tuncay	Berkan Ender	

######	######
0	No size
1	Trivial size
2	Small size
3	Medium size
5	Large size
8	Very large size
13	Too large (size)